

WHAT IS CLAIMED IS:

1. A reusable plant injector, comprising:

a sealed housing defining a reservoir for containing a pressurized fluid, said housing including an elongated neck having an inner end in fluid communication with said reservoir and an outer end defining a nozzle;

an inlet valve disposed in said housing in fluid communication with said reservoir for receiving a supply of fluid therethrough; and

a control valve for selectively starting and stopping a flow of pressurized fluid from said reservoir through said neck and out of said nozzle.

2. The reusable plant injector of claim 1 wherein a seating surface is disposed at said inner end of said neck, and said control valve comprises a shaft having an upper end and a lower end, said lower end including a tapered nose which engages said seating surface when said control valve is in a closed position.

3. The reusable plant injector of claim 2 wherein said housing comprises:

an open-ended body which defines said reservoir and said neck, and a tapered transition section disposed between said reservoir and said neck; and

a cap sealingly attached to said body which encloses the open end of said body.

4. The reusable plant injector of claim 3 wherein said control valve passes through said cap, and said control valve and said shaft cooperatively define means for retaining said control valve in a selected flow position.

5. The reusable plant injector of claim 3 wherein said control valve passes through said cap, and said control valve includes threads disposed at said upper end which engage complementary threads disposed in said cap, such that rotation of said control valve causes said control valve to move towards or away from said seating surface.

6. The reusable plant injector of claim 2 further comprising at least one seal disposed around said shaft of said control valve.

7. The reusable plant injector of claim 6 wherein an upper seal is disposed around said shaft near said upper end thereof and a lower seal is disposed around said shaft near said lower end thereof, wherein said upper seal blocks the flow of fluid between said shaft and said housing and said lower seal blocks the flow of fluid between said shaft and said seating surface.

8. The reusable plant injector of claim 7 wherein the fit of said lower seal against said seating surface is chosen such that said lower seal will allow leakage at a lower pressure than said upper seal.

9. The reusable plant injector of claim 1 further comprising means for relieving pressure which exceeds a predetermined level from said housing.

10. The reusable plant injector of claim 1 further comprising a relief valve disposed in fluid communication with said housing which is normally closed and which opens to release fluid from said housing when the pressure of said fluid exceeds a predetermined level.

11. The reusable plant injector of claim 1 further comprising an overpressure plug disposed in fluid communication with said housing which normally seals a relief vent formed in said housing, wherein said overpressure plug is forced out of said relief vent when the pressure of said fluid exceeds a predetermined level.

12. A method of injecting fluid into a plant, comprising:

providing a reusable plant injector having a sealed reservoir for containing a selected fluid, a nozzle, and a control valve for controlling the flow of said fluid from said nozzle;

introducing said selected fluid into said plant injector and pressurizing said fluid;

forming a hole in said plant, said hole being in communication with a preselected internal structure of said plant;

inserting said plant injector into said plant; and

opening said control valve so as to admit said pressurized fluid into said internal structure of said plant.

13. The method of injecting fluid of claim 12, wherein said plant is a tree and said internal structure is the xylem of said tree.

14. The method of injecting fluid of claim 12, further comprising:

allowing a desired quantity of said fluid to be injected into said plant;

closing said control valve, whereby any residual fluid is retained in said plant injector; and

removing said plant injector from said plant.

15. The method of injecting fluid of claim 12, wherein said fluid is an insecticide.

16. The method of injecting fluid of claim 12, wherein said fluid is an antibiotic.
17. The method of injecting fluid of claim 12, wherein said fluid is a nutrient.
18. The method of injecting fluid of claim 12, wherein said fluid is a plant growth regulator.
19. The method of injecting fluid of claim 12, wherein said fluid is a plant miticide.
20. The method of injecting fluid of claim 12, wherein said fluid is a nematicide.
21. A method of treating a selected number of plants, comprising:
 - providing a plurality of reusable plant injectors each having a sealed reservoir for containing a selected fluid, a nozzle, and a control valve for controlling the flow of said fluid from said nozzle;
 - introducing said selected fluid into each of said plant injectors and pressurizing said fluid;
 - forming a hole in a first one of said plants, said hole being in communication with a preselected internal structure of said plant;
 - inserting a first one of said plant injectors into said first one of said plants;
 - opening said control valve so as to admit said pressurized fluid into said internal structure of said plant;
 - without waiting for said first one of said injectors to be completely emptied of fluid, repeating said steps of forming a hole, inserting a plant injector, and opening a control valve, for subsequent ones of said plants, using subsequent ones of said plant injectors; and;
 - after said fluid has been injected into each one of said selected plants, removing said plant injectors from said plants.

22. The method of treatment of claim 21, wherein the control valve of each injector is closed before it is removed from the plant.